

said C/N judgment means compares the C/N information before a change of a delay point with the C/N information after the change of the delay point to judge the influence from the interference waves in adjacent channels affecting on the desired band when a point of switching between the gain control signal on the RF band and the gain control signal on the IF band in said tuner is set to be the delay point.

11. A digital broadcast receiver according to claim 10, wherein

said C/N detector compares the C/N information calculated in the C/N calculation means with fixed C/N information previously stored in a memory.

12. A digital broadcast receiver according to claim 1, wherein

said automatic gain controller includes:

a state monitor which detects the demodulation state from a demodulation output of said demodulator to generate a demodulation state signal;

a retainer which retains the demodulation state signal outputted from said state monitor for a certain period of time;

a comparator which compares the demodulation state signal outputted from said state monitor with the demodulation state

signal retained by said retainer to output a comparison signal representing a variation of the demodulation state after the elapse of a certain period of time;

5 a switch unit which determines a variation of a delay point on the basis of the comparison signal of said comparator and the demodulation state signal obtained by the state monitor when a point of switching between the gain control signal on the RF band and the gain control signal on the IF band in said tuner is set to be the delay point;

10 a delay point determination unit which renews a value of the delay point from the variation of the delay point determined by said switch unit;

a signal level detector which detects the signal level of the reception signal from the IF signal of said tuner; and

15 a control signal generator which generates the gain control signal on the RF band and the gain control signal on the IF band from the delay point value of said delay point determination unit and the signal level of said signal level detector.

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13. A digital broadcast receiver according to claim 12, wherein

said switch unit includes:

a reception state judgment block which judges a reception  
25 state from the demodulation state signal; and

a selection block which determines the variation of the delay point from the comparison result of said comparator and the judgment result of said reception state judgment block.

5           14. A digital broadcast receiver according to claim 12, wherein

the switch unit includes:

a reception state judgment block which judges a reception state from the demodulation state signal and the delay point  
10 value; and

a selection block which determines the variation of the delay point from the comparison result of said comparator and the judgment result of said reception state judgment block.

15           15. A digital broadcast receiver according to claim 13, wherein

the selection block selects and determines a specific variation of the delay point from a plurality of different delay point variations.

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16. A digital broadcast receiver according to claim 15, wherein

the plurality of delay point variations selected in the election block include at least one value significantly  
25 different from the other variations.

17. A digital broadcast receiver according to claim 1,  
wherein

said automatic gain controller includes:

5 a state monitor which detects the demodulation state from  
a demodulation output of the demodulator to generate a  
demodulation state signal;

a retainer which retains the demodulation state signal  
outputted from said state monitor for a certain period of  
10 time;

a comparator which compares the demodulation state signal  
outputted from said state monitor with the demodulation state  
signal retained by said retainer to output a comparison signal  
representing a temporal transition of the demodulation state;

15 a switch unit which determines a variation of a delay  
point on the basis of the comparison signal of said comparator  
and the demodulation state signal obtained in the state  
monitor when a point of switching between the gain control  
signal on the RF band and the gain control signal on the IF  
20 band in said tuner is set to be the delay point;

a delay point determination unit which renews a value of  
the delay point from the variation of the delay point  
determined in said switch unit;

a timing controller which generates a timing control  
25 signal for reviewing a value of the optimum delay point per

certain period;

an optimum delay point retainer which detects an optimum delay point within a certain period of time from the value of the delay point of said delay point determination unit, the demodulation state signal of said state monitor, and the timing control signal of said timing controller and outputs a value of the optimum delay point;

a signal level detector which detects the signal level of the reception signal from the IF signal of said tuner; and

a control signal generator which generates the gain control signal on the RF band and the gain control signal on the IF band from the value of the optimum delay point retained by said optimum delay point retainer and the signal level of the reception signal of said signal level detector.

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18. A digital broadcast receiver according to claim 17, wherein

said optimum delay point retainer stores and retains an optimum demodulation state within a time period of the control by said timing controller and the value of the optimum delay point at that time.

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19. A digital broadcast receiver according to claim 17, wherein

said optimum delay point retainer renews the value of the

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optimum delay point stored and retained per a time period of the control by said timing controller.

20. A digital broadcast receiver according to claim 17,  
5 wherein

said switch unit includes:

a state judgment block which judges a reception state from the demodulation state signal; and

a selection block which determines the variation of the  
10 delay point from the comparison result of the comparator and the judgment result of said state judgment block.

21. A digital broadcast receiver according to claim 17,  
wherein

15 the switch unit includes:

a state judgment block which judges a reception state from the demodulation state signal and the delay point value; and

a selection block which determines the variation of the  
20 delay point from the comparison result of said comparator and the judgment result of the state judgment block.

22. A digital broadcast receiver according to claim 20,  
wherein

25 said selection block selects and determines a specific

*Replaced by Art. 19.*

variation of the delay point from a plurality of different variations of the delay point.

23. A digital broadcast receiver according to claim 22,  
5 wherein

the plurality of delay point variations selected in said selection block include at least one value significantly different from the other variations.

10 24. A digital broadcast receiver according to claim 1,  
wherein

said automatic gain controller includes:

a state monitor which detects the demodulation state from a demodulation output of said demodulator to generate a  
15 demodulation state signal;

a retainer which retains the demodulation state signal outputted from said state monitor for a certain period of time;

a comparator which compares the demodulation state signal  
20 outputted from said state monitor with the demodulation state signal retained in said retainer to output a comparison signal representing a temporal transition of the demodulation state;

a synchronous state monitor which detects a synchronous state from the output of the demodulator to generate a control  
25 start flag;

a switch unit which determines a variation of a delay point on the basis of the comparison signal of said comparator, the demodulation state signal obtained in said state monitor, and the control start flag obtained in said synchronous state monitor when a point of switching between the gain control  
5 signal on the RF band and the gain control signal on the IF band in said tuner is set to be the delay point;

a delay point determination unit which renews a value of the delay point from the variation of the delay point  
10 determined in said switch unit;

a signal level detector which detects the signal level of the reception signal from the IF signal of said tuner; and

a control signal generator which generates the gain control signal on the RF band and the gain control signal on  
15 the IF band from the value of the delay point of said delay point determination unit and the signal level of said signal level detector.

25. A digital broadcast receiver according to claim 24,  
20 wherein

the switch unit includes:

a control counter which is reset in response to the control start flag obtained in said synchronous state monitor and executes a counting every time when the variation of the  
25 delay point outputted from said switch unit is renewed,



thereby counting up a control number;

a state judgment block which judges a reception state from the demodulation state signal, the value of the delay point, and the control number; and

5 a selection block which determines the variation of the delay point from a comparison result of said comparator and a judgment result of said state judgment block.

26. A digital broadcast receiver according to claim 25,  
10 wherein

the selection block selects and determines a specific variation of the delay point from a plurality of different delay point variations.

15 27. A digital broadcast receiver according to claim 26 wherein

the plurality of delay point variations selected by said selection block include at least one value significantly different from the other variations.

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28. A digital broadcast receiver according to claim 1, wherein

the automatic gain controller includes:

a state monitor which detects the demodulation state from  
25 a demodulation output of the demodulator to generate a

demodulation state signal;

a retainer which retains the demodulation state signal outputted from said state monitor for a certain period of time;

5 a comparator which compares the demodulation state signal outputted from said state monitor with the demodulation state signal retained in said retainer to output a comparison signal representing a temporal transition of the demodulation state;

a synchronous state monitor which detects a synchronous  
10 state from the output of said demodulator to generate a control start flag;

a switch unit which determines a variation of a delay point on the basis of the comparison signal of said comparator, the demodulation state signal obtained in said state monitor,  
15 and the control start flag obtained in said synchronous state monitor when a point of switching between the gain control signal on the RF band and the gain control signal on the IF band in said tuner is set to be the delay point;

a delay point determination unit which renews a value of  
20 the delay point from the variation of the delay point outputted from said switch unit;

a timing controller which generates a timing control signal for reviewing a value of the optimum delay point per certain period;

25 an optimum delay point retainer which detects an optimum

delay point within a certain time period from the value of the  
delay point of said delay point determination unit, the  
demodulation state signal of said state monitor, and the  
timing control signal of said timing controller and outputs a  
5 value of the optimum delay point;

a signal level detector which detects the signal level of  
the reception signal from the IF signal of said tuner; and

a control signal generator which generates the gain  
control signal on the RF band and the gain control signal on  
10 the IF band from the value of the optimum delay point retained  
in said optimum delay point retainer and the signal level of  
said signal level detector.

29. A digital broadcast receiver according to claim 28  
15 wherein

said optimum delay point retainer stores and retains an  
optimum demodulation state within a time period of control in  
said timing controller and a value of the optimum delay point  
at that time.

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30. A digital broadcast receiver according to claim 28  
wherein

said optimum delay point retainer renews the value of the  
optimum delay point stored and retained per time period of  
25 control of said timing controller.

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31. A digital broadcast receiver according to claim 28  
wherein

said switch unit includes:

- 5        a control counter which is reset in response to the  
control start flag obtained in the synchronous state monitor  
and executes a counting every time when the variation of the  
delay point outputted from said switch unit is renewed,  
thereby counting up a control number;
- 10       a reception state judgment block which judges a reception  
state from the demodulation state signal, the value of the  
delay point, and the control number; and
- 15       a selection block which determines the variation of the  
delay point from the comparison result of the comparator and  
the judgment result of the reception state judgment block.

32. A digital broadcast receiver according to claim 31  
wherein

- 20       said selection block selects and determines a specific  
variation of the delay point from a plurality of different  
delay point variations.

33. A digital broadcast receiver according to claim 32,  
wherein

- 25       the plurality of delay point variations selected in said

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selection block include at least one value significantly  
different from the other variations.